UNIVERSITY OF STELLENBOSCH
ECONOMICS DEPARTMENT
ECONOMICS 318: 2019
SUB MODULE: QUANTITATIVE ECONOMICS

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1. INTRODUCTION

This module has two primary objectives. The first objective is to develop basic analytical techniques used for quantitative analysis. To reach this aim certain analytical procedures will be studied and applied to South African economic data. The second is to refresh your mathematical skills.

The minimum outcomes are:

* The ability to use mathemathical techniques in the analysis of micro- and macroeconomic issues.
* The ability to do calculations (with calculator) of basic economic indicators.
* To use Excel to analyse economic data and prepare graphical presentations of economic data.
* Interpret the results obtained.

Please note that the prescribed literature is suppose to be supplemented by notes that you make during lectures. It is also important to complete all the assignments. In the computer tutorials the focus will be on data analysis using Excel. I follow an open door policy - in case of my non-availability, schedule an appointment with the secretary of the department in Schumann 508 or send me an e-mail.

2. LITERATURE

Prescribed:

South African Reserve Bank. (2018). SA Reserve Bank Quarterly Bulletin, December 2018. Available in electronic format on SUNLearn.

Williamson, Stephen (2017). *Macroeconomics* (6th Edition), Pearson.

Yu, D. (2018). *Basic Mathematics for Economics Student*s (2nd Edition), Van Schaik.

Recommended:

Mohr, P.J. (2016). *Economic Indicators*. (5th Edition). Pretoria: Van Schaik Publishers.

3. ASSESSMENT

The final mark (FM) is calculated as a weighted average mark of the two main assessments (A1 and A2) and the further assessments (FA) scheduled during the semester. A student, that has participated in all the main assessments, and did not obtain a 50% upon completion of the scheduled main assessments will gain automatic entrance to the final main assessment (A3) that is scheduled in the second examination period. In this case the best mark obtained in A2 or A3 will be used to calculate the final mark (FM). If the student uses

A3 as a supplementary assessment (e.g. not as a sick assessment), a maximum FM of 50% can be obtained. In semester modules a minimum of two main assessments have to be completed in order to obtain a valid Final mark.

The first main assessment (A1) will focus on a prescribed section of the work, while the second main assessment (A2) include all the work of the semester. If a student, for whatever reason, missed A1 or A2, the third main assessment (A3) covering all the work of the semester and scheduled during the second examination period must be completed. The contribution (weight) of main assessment A3 towards the final mark (FM) will be similar to the assessment it replaces. If a student misses A1 and A2 (for whatever reason) of a semester module, the student cannot pass the module, as a student cannot pass on basis of one main assessment only.

The type and weights of the assessments used in calculation of the final mark for Economics 318:

<table>
<tr><td colspan="2">Main assessment 1 (A1)
Test: 16 March 2019
Contribution to FM: 25%</td></tr>
<tr><td colspan="2">Further assessments (FA)</td></tr>
<tr><td>Summative (FAS):

Assignment with subsections:

Essay (10%)
Quantitative economics worksheet (2.5%)
Game theory worksheet (2.5%)

Submission date will be announced

Contribution to FM: 15%</td><td>Formative (FAF):

Tutorials

Participation percentage to be achieved:
A student must attend at least 75% of all tutorials.

Level of competency to be achieved:
Students must obtain a competency level of at least a 55% weighted average in Quantitative economics and Game Theory tutorials (online or otherwise assessed during tutorials) to pass the module.

A student can still pass the module if the participation percentage and/or competency level was not met but a mark of 55% or higher is obtained in A2 or A3.</td></tr>
<tr><td colspan="2">Main assessment 2 (A2)
Test: 22 May 2019
Contribution to FM: 60%</td></tr>
<tr><td colspan="2">Main assessment 3 (A3)
Test: 12 June 2019</td></tr>
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4. LANGUAGE SPECIFICATION

For this module where both Afrikaans and English are used in the same class group, the combination of facilitated learning opportunities is as follows:

- During each lecture, all information is conveyed at least in English and summaries or emphasis on content are also given in Afrikaans. Questions in Afrikaans and English are, at the least, answered in the language of the question.

- Students are supported in Afrikaans and English during a combination of appropriate, facilitated learning opportunities (e.g. consultations during office hours, or scheduled tutorials and Practicals).

5. LECTURE SCHEDULE

A total of 13 formal lectures and about 8 ordinary and/or Excel tutorials of 50 minutes each will be used for this module. Attendance of the tutorials is **compulsory**. **Thorough preparation** is essential in order to keep up with the volume of work that will be covered. Experience shows that students attending classes well prepared understand the work much easier. The Powerpoint presentation will (if possible) be uploaded to SUNLearn before every lecture.

6 MODULE OUTLINE

1. INTRODUCTION

2. GENERAL DATA ANALYSIS

2.1 Data sources

2.2 Basic techniques and concepts

- 2.2.1 Averages
- 2.2.2 Growth rates
- 2.2.3 Graphs

2.3 Gross Domestic Product, economic growth and business cycles (W: 23-28)

2.4 Macro and micro models and principles (W: 29-36)

2.5 Understanding recent and current events (W: 36-53)

2.6 Measurement of economic activity(W: 58-84)

2.7 Business cycle measurement (W: 90-113)

3. MATHEMATICAL TECHNIQUES

3.1 Basic mathematical concepts and methods (Yu-1+5)

3.2 Economic applications: Linear Mathematics (Yu-2)

3.3 Economic applications: Non-linear mathematics (Yu-3)

3.4 Economic applications: Keynesian model of the economy (Yu-4)

3.5 Multivariate unconstrianed optimisation (Yu-8)

3.6 Multivariate constrained optimisation (Yu-8)